TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors.

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Sand	Proposed Use	Plastering/Concrete
Location/Source	At Plant	Date of Sampling	12/01/2018
Period of Soaking	24 hours	Date of Testing	12/01/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	628	638	645	
B	Weight of oven - dry sample gm.	620	630	638	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1668	1678	1678	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.638	2.681	2.636	2.652
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.290	1.270	1.097	1.219

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	Tejus Consultants, Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors.

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)		Proposed Use	Plastering/Concrete	
Sample Location	At site		Date of Sampling	12/01/2018	
			Date of Testing	12/01/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	180	180	6.00	94.00	90 - 100
2.36 mm	480	660	22.00	78.00	75 - 100
1.18 mm	630	1290	43.00	57.00	55 - 90
0.600 mm	450	1740	58.00	42.00	35 -59
0.300 mm	625	2365	78.83	21.17	8-30
0.150 mm	450	2815	93.83	6.17	0 - 10
Pan	185	3000			-

Remarks : Satisfactory / Not Satisfactory

28/2/2018

Consultant's Representative

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	12/01/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	36 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	385 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	20/01/18	7 days	8.512	22500	390	17.33	
2	13/01/18	20/01/18	7 days	8.516	22500	392	17.42	17.33
3	13/01/18	20/01/18	7 days	8.520	22500	388	17.24	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	09/02/18	28 days	8.532	22500	564	25.07	25.24
2	13/01/18	09/02/18	28 days	8.526	22500	568	25.24	
3	13/01/18	09/02/18	28 days	8.560	22500	572	25.42	

25/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	20/01/18	7 days	8.512	22500	386	17.16	17.10
2	13/01/18	20/01/18	7 days	8.516	22500	385	17.11	
3	13/01/18	20/01/18	7 days	8.520	22500	383	17.02	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	09/02/18	28 days	8.622	22500	563	25.02	25.08
2	13/01/18	09/02/18	28 days	8.626	22500	564	25.07	
3	13/01/18	09/02/18	28 days	8.632	22500	566	25.16	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	20/01/18	7 days	8.502	22500	389	17.29	
2	13/01/18	20/01/18	7 days	8.508	22500	391	17.38	17.27
3	13/01/18	20/01/18	7 days	8.512	22500	386	17.16	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Location:	VIDYARANYAPURA SUB-DIVISION
Grade of concrete:	M25 (Slab)
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	13/01/18	09/02/18	28 days	8.618	22500	563	25.02	25.11
2	13/01/18	09/02/18	28 days	8.622	22500	564	25.07	
3	13/01/18	09/02/18	28 days	8.626	22500	568	25.24	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
Bore - 97

TEJUS
CONSULTANTS

Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	01/02/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	335 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	2mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	01/02/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	35 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	352 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	2mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	26.00%	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	01/02/2018
				Date of Testing	01/02/2018

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	88	88	2.93	97.07	95-100
20.00mm	1562	1650	55.00	45.00	30-70
10.00mm	762	2412	80.40	19.60	10-35
4.75mm	444	2856	95.20	4.80	0-5
Pan	144	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

28/2/2018

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	01/02/2018
				Date of Testing	01/02/2018

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007)
					% of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	95	95	3.17	96.83	95-100
20.00mm	1452	1547	51.57	48.43	30-70
10.00mm	824	2371	79.03	20.97	10-35
4.75mm	560	2931	97.70	2.30	0-5
Pan	69	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

28/2/2018

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	01/02/2018
Period of Soaking	24 hours	Date of Testing	01/02/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	600	630	640	
B	Weight of oven - dry sample gm.	592	622	632	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1652	1671	1678	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.655	2.658	2.667	**2.660**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.351	1.286	1.266	**1.301**

21/2/2018

TEJUS CONSULTANTS

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	01/02/2018	
			Date of Testing	01/02/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	178	178	5.93	94.07	90 - 100
2.36 mm	476	654	21.80	78.20	75 - 100
1.18 mm	628	1282	42.73	57.27	55 - 90
0.600 mm	440	1722	57.40	42.60	35 -59
0.300 mm	612	2334	77.80	22.20	8-30
0.150 mm	448	2782	92.73	7.27	0 - 10
Pan	218	3000			-

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	03/02/2018
				Date of Testing	03/02/2018

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	94	94	3.13	96.87	95-100
20.00mm	1620	1714	57.13	42.87	30-70
10.00mm	762	2476	82.53	17.47	10-35
4.75mm	422	2898	96.60	3.40	0-5
Pan	102	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

28/2/2018

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	5000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	03/02/2018
				Date of Testing	03/02/2018

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007)
					% of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	102	102	3.40	96.60	95-100
20.00mm	1530	1632	54.40	45.60	30-70
10.00mm	982	2614	87.13	12.87	10-35
4.75mm	252	2866	95.53	4.47	0-5
Pan	2134	5000	166.67	-66.67	

Remarks : Satisfactory / Not Satisfactory

28/2/2018

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division

TEJUS
CONSULTANTS

Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	03/02/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	382 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	3mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

28/2/2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	03/02/2018
Period of Soaking	24 hours	Date of Testing	03/02/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	640	635	640	
B	Weight of oven - dry sample gm.	632	628	633	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1679	1675	1677	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.678	2.672	2.660	**2.670**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.266	1.115	1.106	**1.162**

28/2/2018

AE-II
28-2-2018

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	03/02/2018	
			Date of Testing	03/02/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	168	168	5.60	94.40	90 - 100
2.36 mm	512	680	22.67	77.33	75 - 100
1.18 mm	620	1300	43.33	56.67	55 - 90
0.600 mm	440	1740	58.00	42.00	35 -59
0.300 mm	612	2352	78.40	21.60	8-30
0.150 mm	438	2790	93.00	7.00	0 - 10
Pan	210	3000			-
Remarks :	Satisfactory / Not Satisfactory				

28/2/2018.

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	03/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	03/02/2018
		Date of testing:	03/02/2018
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	580	580	5.80	94.20	95-100
22.4	2420	3000	30.00	70.00	60-80
11.2	1720	4720	47.20	52.80	40-60
4.75	1352.0	6072	60.72	39.28	25-40
2.36	1420.0	7492	74.92	25.08	15-30
0.6	784.0	8276	82.76	17.24	8.0-22.0
0.075	890.0	9166	91.66	8.34	0-8
Pan	834.0				
Total	10000.0				

28/2/2018

Consultant's Representative

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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	03/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	03/02/2018
		Date of testing:	03/02/2018
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	340	340	3.40	96.60	95-100
22.4	2450	2790	27.90	72.10	60-80
11.2	2670	5460	54.60	45.40	40-60
4.75	1558.0	7018	70.18	29.82	25-40
2.36	978.0	7996	79.96	20.04	15-30
0.6	766.0	8762	87.62	12.38	8.0-22.0
0.075	674.0	9436	94.36	5.64	0-8
Pan	564.0				
Total	10000.0				

28/2/2018

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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	03/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 3

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	03/02/2018
		Date of testing:	03/02/2018
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	282	282	2.82	97.18	95-100
22.4	2412	2694	26.94	73.06	60-80
11.2	1810	4504	45.04	54.96	40-60
4.75	1620.0	6124	61.24	38.76	25-40
2.36	1622.0	7746	77.46	22.54	15-30
0.6	1234.0	8980	89.80	10.20	8.0-22.0
0.075	710.0	9690	96.90	3.10	0-8
Pan	310.0				
Total	10000.0				

28/2/2018

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Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	M/S Ram and Company, Engineers & Contractors.

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	03/02/2018
		Date of Testing	03/02/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	890	74	816	80
16.0	12.5	1160	160	1000	120
12.5	10.0	782	82	700	68
10.0	6.3	658	58	600	90
Total		**3490**	**374**	**3116**	**358**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.72
Elongation Index(%):	11.49
Combined FI+EL (%)	22.21

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28/2/2018

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Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	M/S Ram and Company, Engineers & Contractors.

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	03/02/2018
		Date of Testing	03/02/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	900	66	834	88
16.0	12.5	1120	132	988	162
12.5	10.0	750	78	672	58
10.0	6.3	612	70	542	56
Total		**3382**	**346**	**3036**	**364**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.23
Elongation Index(%):	11.99
Combined FI+EL (%)	22.22

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Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	M/S Ram and Company, Engineers & Contractors.

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**03/02/2018**
Sample Location	**At plant**	**Date of Testing**	**03/02/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	380.00	362.00	367.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	295.00	288.00	285.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	85.00	74.00	82.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.37	20.44	22.34	
5	Average Aggregate impact value	(%)	21.72			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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28/2/2018

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Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**	
Consultant	**M/s Tejus Consultants**	
Contractor	**M/S Ram and Company, Engineers & Contractors.**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**06/02/2018**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6140	6020
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9702	9742
Wt. of sand in cone (w3) gms.	835	842
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3463	3416
Bulk density of sand (γs)gm/cc	1.31	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.32	2.33
Moisture meter reading(moisture content)	12.80	12.90
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.06	2.06
MDD	2.10	2.10
OMC	13.10%	13.10%
% compaction obtained	98.05	98.12
% compaction required	98%	98%

28/2/2018

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Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**	
Consultant	**M/s Tejus Consultants**	
Contractor	**M/S Ram and Company, Engineers & Contractors.**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**06/02/2018**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6120	6160
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9682	9710
Wt. of sand in cone (w3) gms.	850	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3468	3460
Bulk density of sand (γs)gm/cc	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.33	2.33
Moisture meter reading(moisture content)	13.00	13.10
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.06	2.06
MDD	2.10	2.10
OMC	13.10%	13.10%
% compaction obtained	98.16	98.20
% compaction required	98%	98%

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Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**	
Consultant	**M/s Tejus Consultants**	
Contractor	**M/S Ram and Company, Engineers & Contractors.**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**06/02/2018**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6200	6210
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9596	9653
Wt. of sand in cone (w3) gms.	850	850
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3554	3497
Bulk density of sand (γs)gm/cc	1.34	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.34	2.34
Moisture meter reading(moisture content)	12.82	12.92
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.07	2.08
MDD	2.10	2.10
OMC	13.10%	13.10%
% compaction obtained	98.67	98.85
% compaction required	98%	98%

28/2/2018

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Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**	
Consultant	**M/s Tejus Consultants**	
Contractor	**M/S Ram and Company, Engineers & Contractors.**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**06/02/2018**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6210	6240
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9612	9600
Wt. of sand in cone (w3) gms.	850	850
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3538	3550
Bulk density of sand (γs)gm/cc	1.33	1.33
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.33	2.34
Moisture meter reading(moisture content)	12.92	12.88
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.07	2.07
MDD	2.10	2.10
OMC	13.10%	13.10%
% compaction obtained	98.45	98.62
% compaction required	98%	98%

28/2/2018

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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	07/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	07/02/2018
		Date of testing:	07/02/2018
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	312	312	3.12	96.88	95-100
22.4	2610	2922	29.22	70.78	60-80
11.2	2458	5380	53.80	46.20	40-60
4.75	1362.0	6742	67.42	32.58	25-40
2.36	1312.0	8054	80.54	19.46	15-30
0.6	782.0	8836	88.36	11.64	8.0-22.0
0.075	662.0	9498	94.98	5.02	0-8
Pan	502.0				
Total	10000.0				

28/2/2018

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Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	07/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	07/02/2018
		Date of testing:	07/02/2018
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	362	362	3.62	96.38	95-100
22.4	2462	2824	28.24	71.76	60-80
11.2	2672	5496	54.96	45.04	40-60
4.75	1044.0	6540	65.40	34.60	25-40
2.36	1362.0	7902	79.02	20.98	15-30
0.6	982.0	8884	88.84	11.16	8.0-22.0
0.075	688.0	9572	95.72	4.28	0-8
Pan	428.0				
Total	10000.0				

28/2/2018

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Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors.
Date of Testing	:	07/02/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 3

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	07/02/2018
		Date of testing:	07/02/2018
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	412	412	4.12	95.88	95-100
22.4	2342	2754	27.54	72.46	60-80
11.2	2822	5576	55.76	44.24	40-60
4.75	1192.0	6768	67.68	32.32	25-40
2.36	1482.0	8250	82.50	17.50	15-30
0.6	882.0	9132	91.32	8.68	8.0-22.0
0.075	742.0	9874	98.74	1.26	0-8
Pan	126.0				
Total	10000.0				

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Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	M/S Ram and Company, Engineers & Contractors.

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	07/02/2018
		Date of Testing	07/02/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	880	70	810	58
16.0	12.5	1120	142	978	110
12.5	10.0	700	68	632	80
10.0	6.3	600	60	540	60
Total		**3300**	**340**	**2960**	**308**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.30
Elongation Index(%):	10.41
Combined FI+EL (%)	20.71

28/2/2018

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